

Abstract

Charles University in Prague

Faculty of Pharmacy in Hradec Králové

Department of Biological and Medical Sciences

Student: Kateřina Vlková

Supervisor: PharmDr. Miroslav Kovařík, PhD.

Title of the bachelor thesis: The role of uric acid in the pathogenesis of cardiovascular diseases

The basic biological function of uric acid in the human body is to protect cells from oxidative damage. More precisely, its behavior depends on the physico-chemical environment in which it is located. Under certain conditions and higher concentration in serum, it may act as a prooxidant and participate in the pathophysiology of a variety of diseases. These are mainly kidney disease, non-alcoholic steatosis of the liver, diabetes mellitus II. type and metabolic syndrome. These diseases can precede cardiovascular risk. Cardiovascular failure may be caused by some mechanisms. These mechanisms include especially oxidative stress, inflammation, reduced availability of nitric oxide and endothelial dysfunction, proliferation of smooth muscle cells in blood vessels, insulin resistance or metabolic disorders. The cause of cardiovascular disease associated with uric acid has not been proved. It can only serve as a mediator of harmful effects on vascular tissue and myocardium.

Keywords: uric acid, oxidative stress, inflammation, cardiovascular disease

